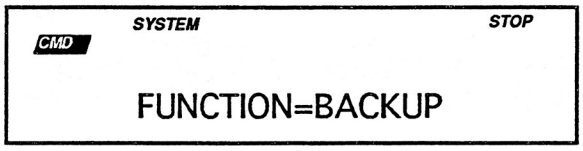
EPS–16 PLUS O.S. Version 1.30 Update

The following additions have been made to the EPS–16 PLUS operating system as of Version 1.30. This document is a supplement to the EPS–16 PLUS Musician's Manual.

BACKUP/RESTORE Specification

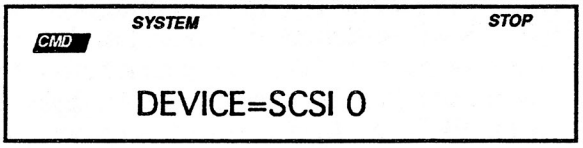
The BACKUP/RESTORE command allows you to make a backup copy of all of the information on a SCSI disk drive. If the drive later fails and must be reformatted, or if you are switching to another drive, you can restore the drive from the backup copy. To invoke this command:

- Press ***Command***, then ***System***, and scroll until "BACKUP/RESTORE" appears in the display.
- Press ***Enter***. The EPS–16 PLUS will show:

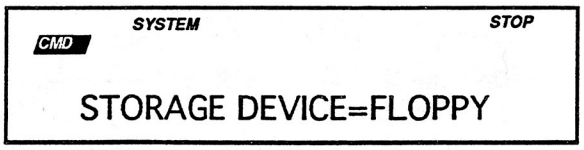


This allows you to select either the BACKUP or RESTORE function. Use the ***Up/Down Arrow*** buttons or the ***Data Entry Slider*** to select the correct function.

- Press ***Enter***, and the EPS–16 PLUS will display:



This allows you to select the device which you want to backup or restore. You may only select SCSI 0 through 7. Press ***Enter***. The EPS–16 PLUS will display:



This allows you to select the device which you want to use to store the backup data. You may select SCSI 0 through 7, or the FLOPPY drive. Press ***Enter***, and the EPS–16 PLUS will proceed with either BACKUP or RESTORE.

BACKUP

Note: If you are using removable cartridges as your backup storage device, you must boot the EPS–16 PLUS with a formatted cartridge in the drive. Otherwise, the EPS–16 PLUS will not recognize the drive as a valid device. Subsequent cartridges need not be formatted beforehand; they will be automatically formatted as part of the backup procedure.

The BACKUP utility first scans the SCSI device to see how many disks (or cartridges) will be necessary to hold the backup data. While this scan occurs, you will see the names of directories appear briefly in the display. When the scan is finished, the EPS–16 PLUS displays:

YOU NEED *nn* DISKS, OK?

(*"nn"* is the number of disks needed to hold the backup data)

- If you press ***Cancel***, the command will abort without copying any data.
- If you have enough disks (or cartridges), press ***Enter***.

If the SCSI drive contains an EPS Operating System, the EPS–16 PLUS will first copy the operating system onto the backup storage device. Next, the EPS–16 PLUS saves a file which contains a "snapshot" of the directory structure for the SCSI drive. This file is named BACKUP FILE, and appears as a SYSTEM EXCLUSIVE file; however, it contains no valid SYSEX data. After these two files, the EPS–16 PLUS proceeds to copy each file on the SCSI drive. Whenever a new disk (or cartridge) is necessary, the EPS–16 PLUS will prompt:

Insert a disk and press ***Enter***. If you insert an unformatted disk (or cartridge), the EPS–16 PLUS will automatically format it. If the disk is not blank, the EPS–16 PLUS will erase the files on the disk before proceeding to copy files to it. As you insert each disk, be sure to write the disk number somewhere on the disk label. If the EPS–16 PLUS encounters errors reading the SCSI drive or writing to the storage device, it will display a descriptive error message and wait for you to press ***Enter***. After you press ***Enter***, the EPS–16 PLUS will display:

CONTINUE ?

If you press ***Enter***, the EPS–16 PLUS will move on to the next file and proceed with the backup. When all of the files have been copied, the EPS–16 PLUS will go back to the Command page, displaying "BACKUP/RESTORE." The actual backup may take more or less disks than the original estimate, depending upon errors reading files and bad sectors encountered writing files.

RESTORE

The RESTORE utility first checks the SCSI device to see if it needs formatting or erasing. If so, it will automatically format and erase the disk. Next, the EPS–16 PLUS displays:

After you insert the first backup disk (or cartridge) and press ***Enter***, the EPS–16 PLUS copies the OS (if necessary) from the backup disk. Then, it loads the BACKUP FILE and recreates all of the directories on the SCSI drive. After this is completed, if you are restoring to a different SCSI device number than the one you backed up, the EPS–16 PLUS will display:

TRANSLATE SCSI **x** to **y** ?

where **x** is the SCSI ID of the drive you backed up, and **y** is the SCSI ID of the drive you are restoring. Pressing the ***Yes•Enter*** button here will cause the EPS–16 PLUS to change all BANKS and MACRO files which contained file paths for **x** to file paths which point at **y**. Pressing ***Cancel*** here will not abort the command; it merely answers "no" to the question.

Note: If you restore to a different device than the one you backed-up, and you answer "no" to the translate question, most of your banks will probably be useless.

The EPS–16 PLUS will restore the files one at a time. It will prompt for you to insert each disk when it is necessary. If you insert the wrong-numbered disk, the EPS–16 PLUS will respond:

WRONG DISK INSERTED

If this happens, insert the correct disk and press ***Enter***.

NOTES ABOUT BACKUP/RESTORE

The RESTORE utility will automatically defragment the SCSI drive, resulting in faster access times for some files.

If you have backed-up your SCSI drive and you accidentally erase a file, you don't need to restore the entire drive to get back that one file. Any of the copied files may be loaded directly from the backup disks without going through the restore process.

If you are backing up to removables, and it is your experience that they are faster when formatted with an INTERLEAVE other than 1, pre-format the necessary cartridges using the FORMAT command which allows you to specify the INTERLEAVE.

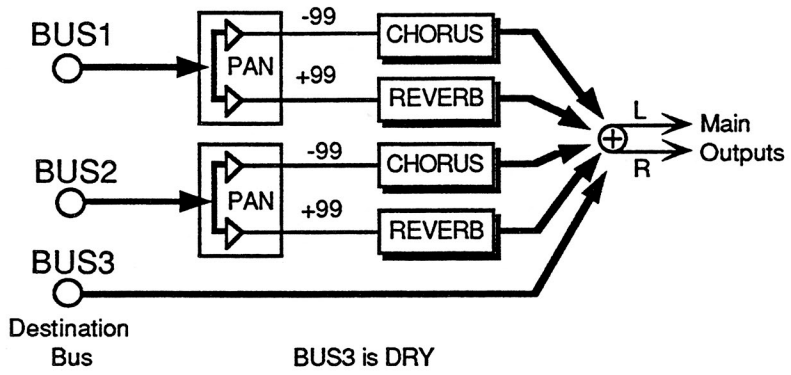
A New Effect Algorithm

This O.S. disk includes a new effect algorithm called PARALLEL EFX. It contains four *sub-effects* which have separate inputs: two reverbs and two chorused delays. These sub-effects are referred to as A, B, C, and D on the parameter pages. For more information on how Effects work in general, see *Section 4 — Effects* in the EPS–16 PLUS Musician's Manual.

Loading PARALLEL EFX

- Insert the OS Disk into the disk drive.
- Press ***Load***, and then ***Effects***. You should see the name of the effect "PARALLEL EFX."
- Press ***Enter*** to load it. The new effect will become the Bank Effect.

PARALLEL EFX Routing



Each sub-effect has a mono input. The stereo busses (called BUS1 and BUS2) are used as four mono inputs to the four sub-effects as shown below:

BUS	PAN	GOES TO SUB-EFFECT
BUS1	-99 (left)	A - Chorused Delay
BUS1	+99 (right)	B - Reverb
BUS2	-99 (left)	C - Chorused Delay
BUS2	+99 (right)	D - Reverb

How To Send Sounds to the Sub-Effect Inputs

The EPS–16 PLUS allows control of the bus and pan at the wavesample level, and at the track level. For multi-timbral sequencing situations, it is usually best to use the track parameters for bus and pan. The track parameters will override the instrument parameters.

To Route an Instrument to an Effect:
Set the track bus and track pan to send an instrument to the desired sub-effect. These parameters are found by pressing ***Edit***, then ***Track*** (you can "direct dial" the bus select parameter by quickly pressing the page 4 button after pressing the ***Track*** button). Scroll left once to get to track pan.

To Route an Individual Wavesample to an Effect:
Select the desired wavesample in the usual way, and then use the wavesample parameters for bus and pan, found on the ***Edit/Amp*** page. This is useful for drums, for example. In this case, make sure the track bus and track pan are both set to WS*.

How To Edit the Sub-Effects

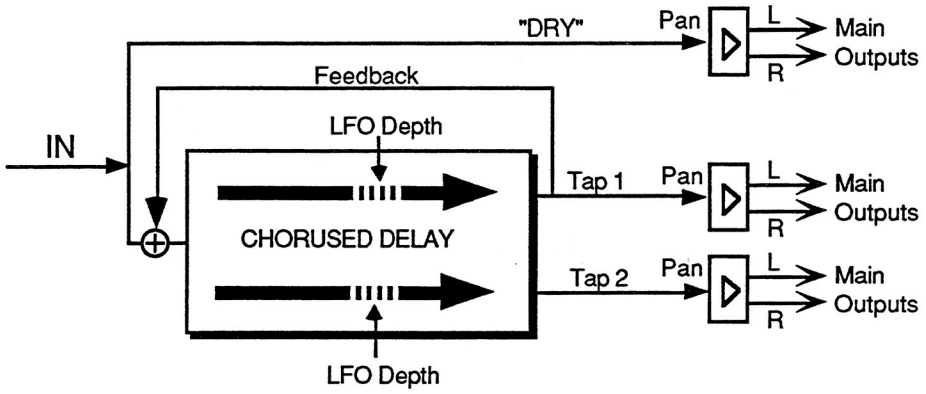
Press ***Edit***, then ***Effects*** to get to the list of effects parameters. The first parameter is the VAR or variation parameter. This lets you select one of four preset settings for the effects.

Scroll right to see the parameters for sub-effect A. These are followed by the parameters for B, C, and D. Since this adds up to a lot of parameters, you should get comfortable with direct dialing these sub-effects. To direct dial the parameters:

Press:	Press:	Then quickly press:	To get to the Parameters for:
Edit	Effects	page 1 or 2	Effect A - Chorused Delay
Edit	Effects	page 3 or 4	Effect B - Reverb
Edit	Effects	page 5 or 6	Effect C - Chorused Delay
Edit	Effects	page 7 or 8	Effect D - Reverb

CHO — Chorused Delay

Chorused Delay Signal Routing



This sub-effect can sound like a stereo chorus, a flanger, a stereo delay, or like combinations of those effects. The basic element of all these effects is the same: a modulatable delay line. This sub-effect includes one LFO (low frequency oscillator) and two modulatable delay lines. Since there are two delay lines, there are many ways to combine and complicate these basic effects.

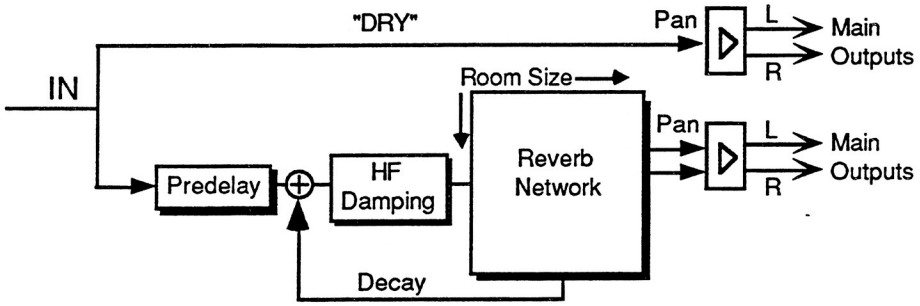
How to get Chorusing, Flanging, or Delays

The basic settings are in these ranges:

Effect Type:	Delay Time:	Modulation Depth:
Flanger	0 ms	5-10
Chorus	10-20 ms	30-40
Delay	100-500 ms	0

REV — Reverb

Reverb Signal Routing



The reverb sub-effect can simulate many different types of rooms and halls, as well as artificial reverberation spaces. The key to this flexibility is in the the room size parameter, which changes the lengths of the delays in the reverberation network. Most of the other parameters are similar to those found in the other EPS–16 PLUS reverb algorithms.

How To Get Ambience, Rooms, or Long Reverbs

Both the decay time and room size parameters affect the length of a reverb. But a small room size sounds very metallic with a high decay time. In general, the room size, decay time, and diffusion parameters should loosely track each other.

Reverb Type:	Decay:	Room Size:
Ambience	10-25	16-40
Room	20-40	40-60
Hall	50-70	70-100
Stadium	70-80	100-128

More parallel effects are available on the WAVeBOY Parallel Effects Disk, which contains 15 different parallel effects combinations. It can be purchased directly from WAVeBOY for $39.95 (Visa/Mastercard accepted). Also available are pitch-shifting effects and effects which use live input from the audio input jack of the EPS–16 PLUS. To order, or for more information, please contact:

WAVeBOY Industries
P.O. Box 233
Paoli, PA 19301
(215) 251-9562

Receiving MIDI Program Change Commands

The EPS-16 PLUS now has the ability to load Banks when receiving appropriate Program Change commands over MIDI in MULTI and MONO B modes.

If the MIDI IN MODE = MULTI or MONO B, incoming program changes are used to load instruments and now also Banks into Instrument•Track locations and to enter and exit directories. To load a given file into an Instrument•Track location, you send the EPS–16 PLUS a program change which is the **file number +1**. To load a Bank file, send the EPS–16 PLUS a program change which is the **Bank file number +1**. When a program change is received, the EPS–16 PLUS will load the appropriate file from the currently selected storage device (FLOPPY, SCSI 1-7, or FLASH).